error in conſtructing bridges of wood; the mode of arranging the parts, by a repetition of bracing, has alſo expoſed almoſt every ſide of the whole of the timbers to the changes of the weather; conſequently, the whole was reduced to the durability of one ſtick, ſimilar to ſuſpending a cage in open air, each ſtick is expoſed to decay, without receiving ſhelter from each other.

It has alſo been uſual to place ſupporters in the water, ſubjecting them to the ſurge of floods, which ſhake the whole fabric; which ſupporters decaying progreſſively let down the upper works.

But to render wood-bridges of much more importance than they have hitherto been conſidered; firſt, from their extenſive ſpan; ſecond, by their durability; two things muſt be conſidered: *firſt*, that the wood-works ſhould ſtand clear of the ſtream, in every part, by which it never would have any other weight to ſuſtain than that of the uſual carriage; *ſecond*, that it be ſo combined as to exclude as much as poſſible the air and rain.

For this purpoſe, in erecting a bridge of wood, I would proceed much on the ſame ſyſtem as in conſtructing the one of iron ſtaves. For inſtance, ſuppoſe a bridge three hundred feet ſpan, thirty feet wide, the butments being rendered ſecure, and centres raiſed on piles; let timbers, if convenient, be procured thirty feet long, and of as great diameter as the country will produce; ſuch timbers being ſquared and planed to the radius of the arch, with the holes to receive a bolt or trundle, about four feet diſtant from each other; the whole operation in ſpringing the arch, will be to tar or paint the junctions with white lead, and inſert the trundle, as at A, Fig. II. and preſs them cloſe, thus lay them ſide by ſide, by which means an arch might be laid in a few

days,

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